



STIC Search Report

EIC 1700

STIC Database Tracking Number: 179383

**TO: Helen Pezzuto
Location: REM 10A29
Art Unit : 1713
February 15, 2006**

Case Serial Number: 10/706987

**From: Kathleen Fuller
Location: EIC 1700
REMSSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov**

Search Notes

Access DB# 174382

Scientific and Technical Information Center

If more than one search is submitted, please prioritize searches in order of need.

Other (specify) _____

=> FILE REG

FILE 'REGISTRY' ENTERED AT 12:46:47 ON 15 FEB 2006

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STRUCTURE FILE UPDATES: 14 FEB 2006 HIGHEST RN 874270-88-9

DICTIONARY FILE UPDATES: 14 FEB 2006 HIGHEST RN 874270-88-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

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*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> FILE HCAPL

FILE 'HCAPLUS' ENTERED AT 12:46:51 ON 15 FEB 2006

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FILE COVERS 1907 - 15 Feb 2006 VOL 144 ISS 8

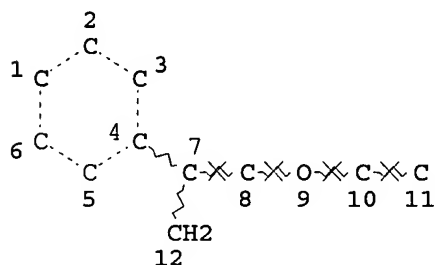
FILE LAST UPDATED: 14 Feb 2006 (20060214/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE

L5 SCR 2043
L10 STR



252 structures (polymers) from
the query which covers
starting material III and
products I or II

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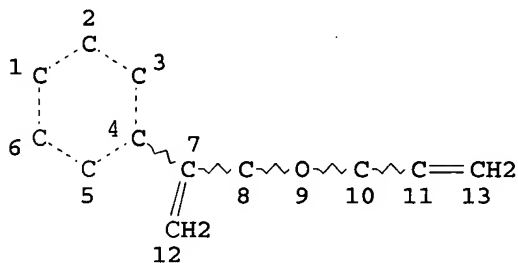
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NSPEC IS RC AT 9
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L14 252 SEA FILE=REGISTRY SSS FUL L10 AND L5
L15 STR



que III

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

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NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE

L18 5 SEA FILE=REGISTRY SUB=L14 SSS FUL L15
L23 5 SEA FILE=HCAPLUS ABB=ON L18

5 CA references

=> D L23 BIB ABS IND HITSTR 1-5

L23 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:358626 HCAPLUS

DN 143:60319

TI Cyclopolymerization. XXXIII. Radical polymerizations and copolymerizations of 1,6-dienes with 2-phenylallyl group and thermal properties of polymers derived therefrom

AU Lee, Hyun-Jin; Nakai, Hiroki; Kodaira, Toshiyuki; Urushisaki, Michio; Hashimoto, Tamotsu

CS Department of Materials Science and Engineering, Faculty of Engineering, University of Fukui, Fukui, 910-8507, Japan

SO European Polymer Journal (2005), 41(6), 1225-1233

CODEN: EUPJAG; ISSN: 0014-3057

PB Elsevier B.V.

DT Journal

LA English

AB Radical polymns. of α -allyloxymethylstyrene (1) and copolymns. of α -(2-phenylallyloxy)methylstyrene (2) were undertaken to acquire comprehensive understanding on polymerization behavior of these dienes and to get polymers with high thermal stability and high glass transition temperature (T_g). One of the monofunctional counterparts of 1 is a derivative of α -methylstyrene, the ceiling temperature of which is low, and the other is an allyl compound that is well-known for the low homopolymn. tendency. This means that the intermol. propagation reactions leading to pendant uncyclized units are suppressed during the polymerization of 1 to yield highly cyclized polymers. In fact, the degree of cyclization of poly(1) obtained at 140° attained the value 92%. Structural studies revealed that repeat cyclic units of poly(1) consist exclusively of five-membered rings. Poly(1) was found to be stable up to 300 °C, but its T_g values were detected at around 100 °C. They are considerably lower than the targeted values which should lie between 180 and 220°. An addnl. drawback of poly(1) is its low mol. weight probably due to a degradative chain transfer. For this reason, copolymns. of 2 with 1 and with styrene were also carried out to seek for the possibility to control the thermal properties precisely. Monomer 2 was chosen, since it was reported in our previous work that it yields polymers with thermal stability up to 300° and T_g higher than 250°. Copolymn. of 2 with styrene afforded polymers with desired thermal properties and high mol. weight

CC 35-4 (Chemistry of Synthetic High Polymers)

ST diene phenylallyl cyclopolymer thermal property

IT Polymerization

(cyclopolymer.; radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

IT Glass transition temperature

(radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

IT 697287-35-7P 697287-36-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

IT 106-95-6, reactions 6006-81-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

IT 123078-75-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

IT 853908-17-5P 853908-18-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

IT 697287-35-7P 697287-36-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(radical polymns. and copolymns. of dienes with phenylallyl group and thermal properties)

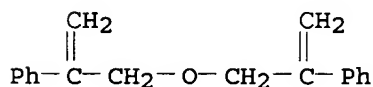
RN 697287-35-7 HCAPLUS

CN Benzene, 1,1'-[oxybis(1-methylene-2,1-ethanediyl)]bis-, homopolymer (9CI)
(CA INDEX NAME)

CM 1

CRN 53891-28-4

CMF C18 H18 O



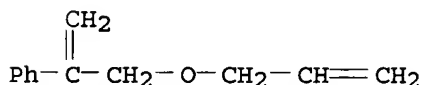
RN 697287-36-8 HCAPLUS

CN Benzene, [1-[(2-propenyloxy)methyl]ethenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 123078-75-1

CMF C12 H14 O



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:815499 HCAPLUS

DN 142:23580

TI Cyclopolymerization. Part XXXII. Radical polymerization of
 α -(2-phenylallyloxy)methylstyrene: synthesis of highly cyclized
polymers with high glass transition temperatures and thermal stability

AU Lee, Hyun-Jin; Kodaira, Toshiyuki; Urushisaki, Michio; Hashimoto, Tamotsu

CS Department of Materials Science and Engineering, Faculty of Engineering,
University of Fukui, Fukui, 910-8507, Japan

SO Polymer (2004), 45(22), 7505-7512
CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier Ltd.

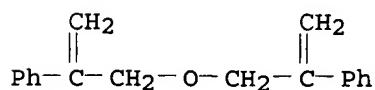
DT Journal

LA English

AB A new 1,6-diene, α -(2-phenylallyloxy)methylstyrene (1), was
synthesized and its radical cyclopolyms. were studied, since 1 is
expected to yield highly cyclized polymers with thermal stability and high
glass transition temps. A low homopolymn. tendency of the monofunctional
counterpart of 1 can be assumed reasonably, because it is a derivative of

α -methylstyrene with a low ceiling temperature This means that intermol. propagation leading to pendant unsaturations is hard to occur during the polymerization of 1, which results in the formation of highly cyclized polymers. In fact, the degree of cyclization of poly(1) obtained at 180°C attained the value 99%. Structural studies using a monomeric cyclic compound obtained by the telomerization of 1 permitted to assign main repeating cyclic units of poly(1) to a six-membered ring. The poly(1)s with a higher degree of cyclization were found to be stable up to 300°C on thermogravimetric analyses and their glass transition temps. were detected at temps. over 250°C.

CC 35-4 (Chemistry of Synthetic High Polymers)
 ST phenylallyloxymethylstyrene cyclization prepn polymn;
 polyphenylallyloxymethylstyrene prepn thermal stability glass temp
 IT Glass transition temperature
 Thermal stability
 (cyclopolymn. of α -(2-phenylallyloxy)methylstyrene for synthesis of highly cyclized polymers with high glass transition temps. and thermal stability)
 IT Polymerization
 (cyclopolymn.; cyclopolymn. of α -(2-phenylallyloxy)methylstyrene for synthesis of highly cyclized polymers with high glass transition temps. and thermal stability)
 IT 28931-31-9P 697287-35-7P 800369-31-7P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (cyclopolymn. of α -(2-phenylallyloxy)methylstyrene for synthesis of highly cyclized polymers with high glass transition temps. and thermal stability)
 IT 3360-54-1P, α -Bromomethylstyrene 30584-69-1P, Hydroxymethylstyrene
 53891-28-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (cyclopolymn. of α -(2-phenylallyloxy)methylstyrene for synthesis of highly cyclized polymers with high glass transition temps. and thermal stability)
 IT 800369-32-8P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (telomerization product; cyclopolymn. of α -(2-phenylallyloxy)methylstyrene for synthesis of highly cyclized polymers with high glass transition temps. and thermal stability)
 IT 697287-35-7P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (cyclopolymn. of α -(2-phenylallyloxy)methylstyrene for synthesis of highly cyclized polymers with high glass transition temps. and thermal stability)
 RN 697287-35-7 HCAPLUS
 CN Benzene, 1,1'-[oxybis(1-methylene-2,1-ethanediyl)]bis-, homopolymer (9CI)
 (CA INDEX NAME)
 CM 1
 CRN 53891-28-4
 CMF C18 H18 O



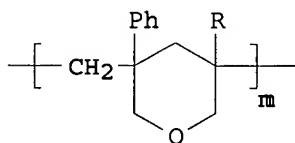
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

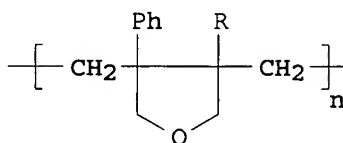
L23 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2004:451660 HCAPLUS
 DN 141:8038
 TI Thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability
 IN Tei, Youichi; Kodaira, Toshiyuki
 PA Fuji Electric Device Technology Co., Ltd., Japan
 SO U.S. Pat. Appl. Publ., 9 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

application

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004106756	A1	20040603	US 2003-706987	20031114
	JP 2004161939	A2	20040610	JP 2002-331197	20021114
PRAI	JP 2002-331197	A	20021114		
GI					



I



II

AB The present invention relates to a thermoplastic allyloxymethylstyrene-based resin comprising structural units I and II, wherein R = H or a hydrocarbon group, and m, n = 0 or ≥1 integer excluding m = n = 0. Thus, 193 g α-bromomethylstyrene and 262 g α-hydroxymethylstyrene were reacted at 40° for 50 h in the presence of sodium hydroxide and tetrabutylammonium bromide to give phenylallyloxymethylstyrene, 100 mL of which was polymerized in the presence of AIBN to give a polymer with glass transition temperature 220°, thermal decomposition temperature 360°, moisture content 0.008%, and Mn 14,000.

IC ICM C08F224-00
 INCL 526266000
 CC 37-3 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38
 ST thermoplastic allyloxymethylstyrene resin heat humidity resistance moldability; bromomethylstyrene hydroxymethylstyrene reactant monomer prepn; phenylallyloxymethylstyrene homopolymer prepn
 IT Heat-resistant materials
 Water-resistant materials
 (preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)
 IT Molded plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)
 IT Plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thermoplastics; preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)
 IT 53891-28-4P, Benzene, 1,1'-[oxybis(1-methylene-2,1-ethanediyl)]bis-123078-75-1P, Benzene, [1-[(2-propenyloxy)methyl]ethenyl]-

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)

IT 697287-35-7P 697287-36-8P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)

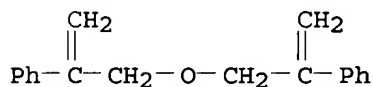
IT 106-95-6, Allyl bromide, reactions 3360-54-1, α -Bromomethylstyrene 6006-81-1, α -Hydroxymethylstyrene
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant in monomer preparation; preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)

IT 697287-35-7P 697287-36-8P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of thermoplastic allyloxymethylstyrene-based resin with good heat and humidity resistance and moldability)

RN 697287-35-7 HCAPLUS
CN Benzene, 1,1'-[oxybis(1-methylene-2,1-ethanediyl)]bis-, homopolymer (9CI)
(CA INDEX NAME)

CM 1

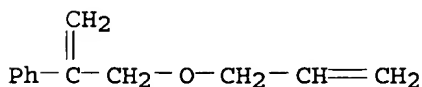
CRN 53891-28-4
CMF C18 H18 O



RN 697287-36-8 HCAPLUS
CN Benzene, [1-[(2-propenyloxy)methyl]ethenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 123078-75-1
CMF C12 H14 O



L23 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1993:672538 HCAPLUS
DN 119:272538
TI Unsaturated polymers with high refractive index
IN Takaoka, Toshiaki; Tanaka, Katsuyoshi; Kato, Kenji
PA Nippon Oils & Fats Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05125115	A2	19930521	JP 1991-288100	19911101
PRAI	JP 1991-288100		19911101		

AB The title polymers with good transparency and heat resistance, useful for optical materials such as lenses, optical elements, etc., are prepared by polymerizing monomers containing unsatd. compds. $\text{CH}_2:\text{C}(\text{CO}_2\text{R})(\text{CH}_2)_n\text{C}_6\text{H}_3\text{X}$ (R = C1-4 alkyl, alkenyl, C3-12 cycloalkyl, $\text{CH}_2\text{C}_6\text{H}_3\text{Y}$, $\text{C}_6\text{H}_3\text{Y}$, X, Y = H, Cl, Br, I; n = 0, 1). Thus, a mixture of Me α -phenylacrylate 5, 2,2-bis(4-acryloyloxydiethoxyphenyl)propane 5, and Bz2O2 0.2 g was cast between glass plates and heated at 70° for 15 h, the temperature was increased to 120° for 3 h and kept at 120° for 2 h to obtain a polymer showing refractive index 1.583, yellowing index 0.52, Abbe number 34, and no change at 130° or in Me_2CO for 2 h.

IC ICM C08F020-30
ICS G02B001-04

CC 37-3 (Plastics Manufacture and Processing)

ST acrylic polymer prepn refractive index; heat resistant acrylic polymer transparent; optical material acrylic polymer

IT Transparent materials
(heat-resistant, acrylic polymers, with high refractive index, for optical materials)

IT Heat-resistant materials
(transparent, acrylic polymers, with high refractive index, for optical materials)

IT 31308-21-1P 151204-58-9P 151204-59-0P 151206-36-9P 151206-38-1P
151206-39-2P 151206-40-5P 151206-41-6P 151206-43-8P
151234-27-4P 151658-15-0P
RL: PREP (Preparation)
(preparation of, with high refractive index, heat-resistant, transparent, for optical materials)

IT 151234-27-4P
RL: PREP (Preparation)
(preparation of, with high refractive index, heat-resistant, transparent, for optical materials)

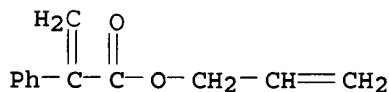
RN 151234-27-4 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, di-2-propenyl ester, polymer with (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bis(2-methyl-2-propenoate) and 2-propenyl α -methylenebenzeneacetate (9CI) (CA INDEX NAME)

CM 1

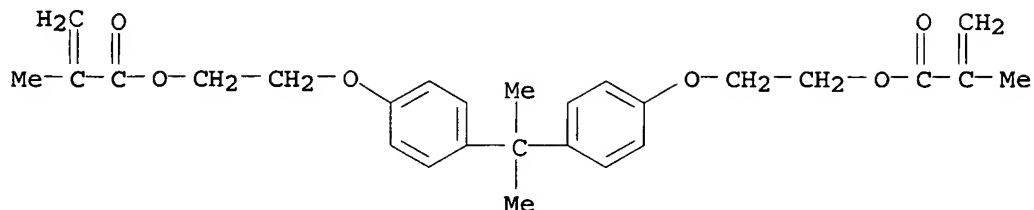
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CMF C12 H12 O2



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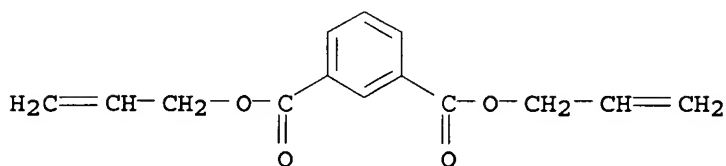
CRN 24448-20-2
CMF C27 H32 O6



CM 3

CRN 1087-21-4

CMF C14 H14 O4



- L23 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1972:25654 HCAPLUS
 DN 76:25654
 TI Effect of stability of the cyclized radical on the rate of cyclopolymerization
 AU Butler, George Bergen; Kimura, Shoichi; Baucom, Keith B.
 CS Dep. Chem., Univ. Florida, Gainesville, FL, USA
 SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1970), 11(1), 48-52
 CODEN: ACPPAY; ISSN: 0032-3934
 DT Journal
 LA English
 AB The differences between the cyclopolymerization rates of methacrylic anhydride [760-93-0] and Me methacrylate [80-62-6], methacrylonitrile [126-98-7] and 2,6-dicyano-1,6-heptadiene [27905-63-1], and 2-phenylallyl methacrylate [15484-48-7] and 2-phenylallyl 2-carboethoxyallyl ether [33065-42-8] are attributed to differences in the stability of the cyclized radicals.
 CC 35 (Synthetic High Polymers)
 ST cyclopolymerization rate methacrylic anhydride; polymerization rate dicyanoheptadiene; methyl methacrylate polymerization rate; methacrylonitrile polymerization rate; allyl methacrylate polymerization rate; phenylallyl ether polymerization rate
 IT Ring closure and formation
 (in polymerization, of dicyanoheptadiene and of methacrylic anhydride)
 IT Kinetics of polymerization
 (of dicyanoheptadiene and methacrylic anhydride, cycloaddition effect on)
 IT Infrared spectra
 Nuclear magnetic resonance
 Ultraviolet and visible spectra
 (of dicyanoheptadiene polymers and of methacrylic anhydride polymers and their model compounds.)
 IT Polymerization

(ring closure in, of dicyanoheptadiene and of methacrylic anhydride)

IT 15484-48-7P 33065-42-8P 34821-26-6P 34821-27-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and spectra of)

IT 10029-04-6P 17435-77-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

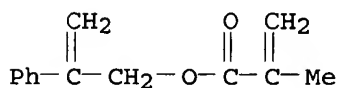
IT 9011-14-7P 25067-61-2P 25300-99-6P 28931-29-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, kinetics of)

IT 34821-26-6P 34821-27-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and spectra of)

RN 34821-26-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-phenyl-2-propenyl ester, homopolymer (9CI)
(CA INDEX NAME)

CM 1

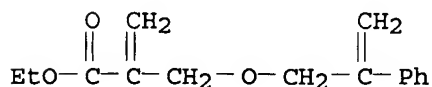
CRN 15484-48-7
CMF C13 H14 O2



RN 34821-27-7 HCAPLUS
CN 2-Propenoic acid, 2-[[[(2-phenyl-2-propenyl)oxy]methyl]-, ethyl ester,
homopolymer (9CI) (CA INDEX NAME)

CM 1

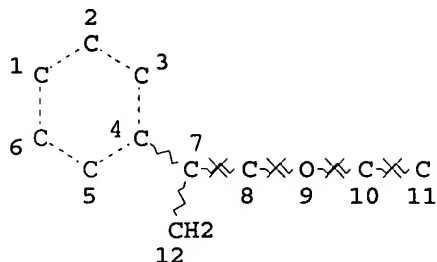
CRN 33065-42-8
CMF C15 H18 O3



=>

=> => D QUE

L5 SCR 2043
L10 STR



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NSPEC IS RC AT 9

NSPEC IS RC AT 10

NSPEC IS RC AT 11

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

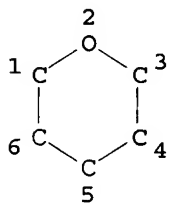
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NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L14 252 SEA FILE=REGISTRY SSS FUL L10 AND L5

L19 STR

*I structure*

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

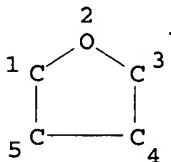
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NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L20 STR

*II structure*

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L22 6 SEA FILE=REGISTRY SUB=L14 SSS FUL L19 OR L20

L24 5 SEA FILE=HCAPLUS ABB=ON L22

=> D L24 BIB ABS IND HITSTR 1-5

L24 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:801694 HCAPLUS

DN 141:306188

TI Manufacture of substrates using thermoplastic
polyphenylaryloxymethylstyrene for magnetic recording media

IN Kobayashi, Ryoji; Tsuda, Koichi; Chang, Yung-yi; Sakaguchi, Shoji

PA Fuji Electric Holding Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

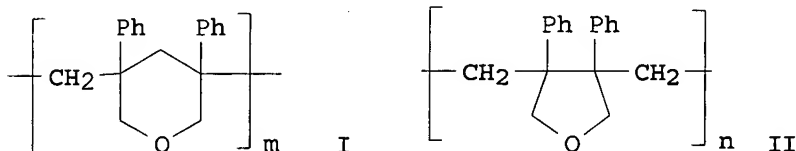
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004273072	A2	20040930	JP 2003-65588	<u>20030311</u>
PRAI	JP 2003-65588		20030311		
GI					

2



- AB At least 2 thermoplastic layers from different materials (I) and (II) (m, n = integer ≥ 1) which have different mech. strengths are laminated on substrates from materials which have greater glass transition temperature and mech. strength than the thermoplastics. The manufacturing process includes press molding of the thermoplastics at higher than glass transition temperature
- IC ICM G11B005-73
ICS B32B027-30; C08F016-32; G11B005-64; G11B005-72; G11B005-725; G11B005-84
- CC 77-8 (Magnetic Phenomena)
- ST substrate thermoplastic polyphenylaryloxymethylstyrene magnetic recording media; press molding thermoplastic glass transition temp
- IT Magnetic recording materials
(manufacture of substrates using thermoplastic polyphenylaryloxymethylstyrene for magnetic recording media)
- IT Glass transition temperature
(of substrates using thermoplastic polyphenylaryloxymethylstyrene for magnetic recording media)
- IT Molding
(press; in manufacture of substrates using thermoplastic

polyphenylaryloxymethylstyrene for magnetic recording media)

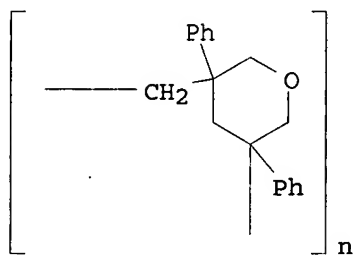
IT Plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thermoplastics; manufacture of substrates using thermoplastic
 polyphenylaryloxymethylstyrene for magnetic recording media)

IT 764659-86-1 764659-87-2
 RL: PEP (Physical, engineering or chemical process); PYP (Physical
 process); TEM (Technical or engineered material use); PROC (Process); USES
 (Uses)
 (press molding in manufacture of substrates using thermoplastic
 polyphenylaryloxymethylstyrene for magnetic recording media)

IT 764659-86-1 764659-87-2
 RL: PEP (Physical, engineering or chemical process); PYP (Physical
 process); TEM (Technical or engineered material use); PROC (Process); USES
 (Uses)
 (press molding in manufacture of substrates using thermoplastic
 polyphenylaryloxymethylstyrene for magnetic recording media)

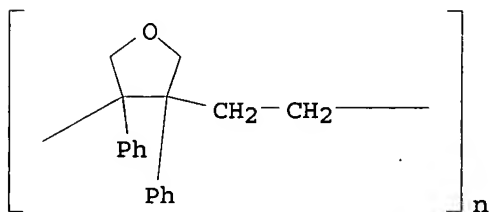
RN 764659-86-1 HCAPLUS

CN Poly[(tetrahydro-3,5-diphenyl-2H-pyran-3,5-diyl)methylene] (9CI) (CA
 INDEX NAME)



RN 764659-87-2 HCAPLUS

CN Poly[(tetrahydro-3,4-diphenyl-3,4-furandiyl)-1,2-ethanediyl] (9CI) (CA
 INDEX NAME)



L24 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:848926 HCAPLUS

DN 136:119162

TI Preparation and characterization of a new solvent-free polymer electrolyte
 based on spiroketal structure

AU Tsutsumi, Hiromori; Shirotani, Rumiko; Onimura, Kenjiro; Oishi, Tsutomu

CS Department of Applied Chemistry and Chemical Engineering, Faculty of
 Engineering, Yamaguchi University, Yamaguchi, 755-8611, Japan

SO Electrochemical and Solid-State Letters (2001), 4(12), A195-A196

CODEN: ESLEF6; ISSN: 1099-0062

PB Electrochemical Society

DT Journal
LA English
AB Solvent-free solid polymer electrolytes based on spiropolymers were prepared and their properties were confirmed by conductance, differential scanning calorimetry, and X-ray diffraction measurements. The spiropolymer was synthesized from the bicyclic diketone and pentaerythritol. The spiro-polyketal (SP) dissolves lithium perchlorate and the conductivity of the (SP)1.5(LiClO₄)1 complex is 4.24×10^{-5} S cm⁻¹ at 30° and 3.83×10^{-4} S cm⁻¹ at 60°.

CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 36, 76

ST cyclic polyether lithium perchlorate polymer electrolyte film prepn;
spiroketal cyclic polyether lithium perchlorate complex cond

IT Spiro compounds
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(ketals; preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT Electric conductivity
Films
Glass transition temperature
Phase transition enthalpy
Polymer electrolytes
(preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT Polyethers, preparation
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT Ketals
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(spiroketals; preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT Polymers, preparation
RL: POF (Polymer in formulation); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(spiropolymers; preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT 7791-03-9, Lithium perchlorate
RL: MOA (Modifier or additive use); USES (Uses)
(preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT 391671-10-6P, 1,5-Diethylbicyclo[3.3.0]octane-3,7-dione-pentaerythritol copolymer 391671-11-7P
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

IT 391671-11-7P
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and characterization of a new solvent-free polymer electrolyte based on spiroketal structure)

RN 391671-11-7 HCAPLUS
CN Poly(3''a,6''a-diethyltetrahydrodispiro[1,3-dioxane-5,5'-[1,3]dioxane-2',2''(1''H)-pentalene]-2,5''(3''H)-diylidene) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:66838 HCAPLUS
DN 128:160897
TI Dissolution inhibitors for 193-nm chemically amplified resists
AU Ushirogouchi, Tohru; Asakawa, Koji; Okino, Takeshi; Shida, Naomi; Kihara, Naoko; Nakase, Makoto
CS Mater. Devices Rs. Lab., Res. Dev. Cent., Toshiba Corp., Toshiba, 210, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (1997), 36(12B), 7625-7631
CODEN: JAPNDE; ISSN: 0021-4922
PB Japanese Journal of Applied Physics
DT Journal
LA English
AB Dissoln. characteristics and adhesion of 193-nm resists have been investigated by using MO calcns. The calcn. indicated that naphthalene compound had better adhesion than alicyclic compds. by a factor of 1.2. Another calcn. result obtained indicated that naphthalene was more hydrophilic than alicyclic compds. In order to improve the adhesion and dissoln. characteristics of the alicyclic resist, introduction of the naphthalene backbone into alicyclic resists was attempted in the form of additives (dissoln. inhibitors) or copolymer components. Dissoln. inhibitors that have simultaneously a naphthol novolak backbone and a characteristic generate carboxylic acid, such as tetrahydropyranyl ester of naphthol novolak compound condensed with glyoxlic acid (NV4THP), were the most effective dissoln. inhibitors increasing dry etch resistance of base polymer by 14% and pattern resolution of original resist by 10%. The naphthalene dissoln. inhibitor also largely improves pattern adhesion. These results were consistent with above-mentioned calcn. results. 193-Nm resists containing vinyl naphthalene in the copolymer structure were also investigated and fundamental resist requirements were satisfied with this polymer by adding adamantane dissoln. inhibitor di-ter-Bu 2-((1-adamantyl)carbonylmethyl) malonate (ADTB).

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST dissoln inhibitor chem amplified photoresist
IT Photoresists
(chemical-amplified; dissoln. inhibitor for)

IT 202654-72-6, Menthyl acrylate-methacrylic acid-tetrahydropyranyl acrylate copolymer 202654-73-7, Menthyl acrylate-methacrylic acid-methyl methacrylate copolymer 202654-74-8, Menthyl acrylate-methacrylic acid-tetrahydropyranyl acrylate-2-vinylnaphthalene copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(contained in 193-nm chemical amplified resist)

IT 51757-47-2 191413-52-2 202654-65-7 202654-66-8 202654-67-9
202654-69-1 202654-71-5
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(dissoln. inhibitors for 193-nm chemical amplified resist)

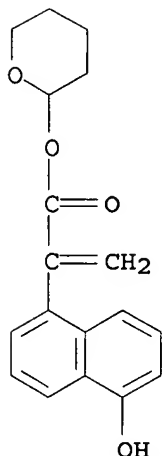
IT 202654-69-1
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(dissoln. inhibitors for 193-nm chemical amplified resist)

RN 202654-69-1 HCAPLUS
CN 1-Naphthaleneacetic acid, 5-hydroxy- α -methylene-, tetrahydro-2H-pyran-2-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 202654-68-0

CMF C18 H18 O4

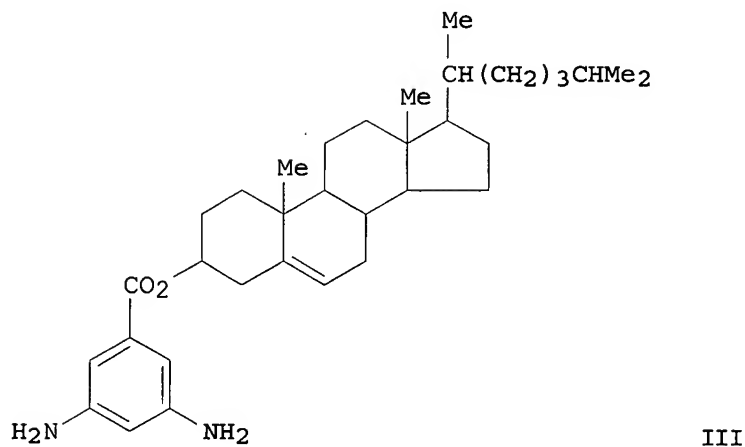
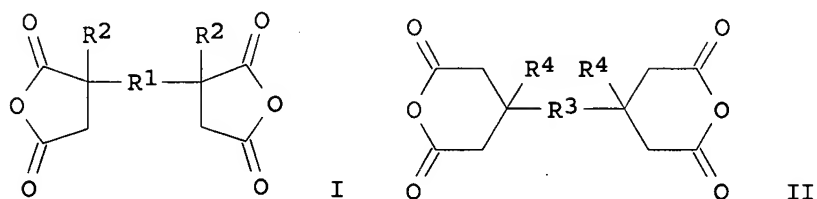


RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:14617 HCAPLUS
DN 126:67628
TI Preparation of polyamic acids and polyimides as liquid crystal orientation agents
IN Kawamura, Shigeo; Michino, Yoshuki; Eguchi, Kazuhiro; Matsuki, Yasuo
PA Japan Synthetic Rubber Co., Ltd., Japan; JSR Ltd.
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08259949	A2	19961008	JP 1995-68073	19950327
	JP 3700197	B2	20050928		
PRAI	JP 1995-68073		19950327		
GI					



AB A liquid crystal orientation agent contains a polyamic acid obtained by reaction of tetracarboxylic acid dianhydrides with diamines and/or polyimides obtained by dehydration-cyclization of the polyamic acid. Said tetracarboxylic acid anhydrides fulfill the following conditions (1) they contains ≥ 1 aromatic rings, (2) 4 carbonyl groups forming the 2 acid anhydride group are not directly bonded to the aromatic rings, (3) the mol. structures are sym., and (4) they do not contains O forming ether bonds. Preferred tetracarboxylic acid anhydrides are represented by formula (I or II; R₁, R₃ = bivalent organic radical containing ≥ 1 aromatic rings; R₂, R₄ = H, alkyl). Above liquid crystal orientation agent forms a liquid crystal orientation film which show good liquid crystal orientation under relatively mild rubbing conditions and possess excellent electronic properties. Thus, II (R₄ = H, R₃ = 1,4-phenylene) 31.56, p-phenylene diamine 10.72, and diamine (III) 2.72 g were dissolved in 405 g N-methyl-2-pyrrolidone, heated at 60° for 6 h, and poured into a large excess of MeOH for precipitation to give, after washing the precipitate with MeOH, 40.25 g polyamic acid. This polymer (6 g) was dissolved in 120 g γ -butyrolactone to gave a .apprx.5 weight% solution, which was spin-coated on a glass substrate for a liquid crystal device and dried at 200° for 1 h to form a thin film (0.05 μ m). The film was treated by a rubbing machine having a roll rapped with a Rayon cloth to form a liquid crystal orientation film, which showed good orientation for nematic liquid crystal MLC-2001 and 98.5% voltage retention ratio at 60°.

IC	ICM	C09K019-56
	ICS	G02F001-1337

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s) : 75

ST polyamic acid prepn liq crystal orientation; polyimide prepn liq crystal orientation agent; tetracarboxylic acid anhydride diamine copolymer prepn

IT Liquid crystal displays

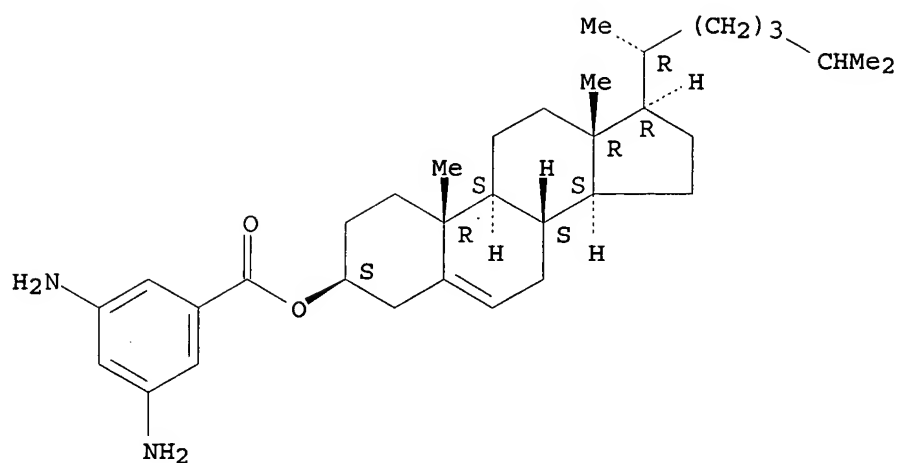
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(preparation of polyamic acids and polyimides as liquid crystal orientation
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agents)
IT Polyamic acids
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(tetracarboxylic acid dianhydrides-diamines copolymers; preparation of polyamic acids and polyimides as liquid crystal orientation agents)
IT Polyimides, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(tetracarboxylic acid dianhydrides-diamines copolymers; preparation of polyamic acids and polyimides as liquid crystal orientation agents)
IT 184908-88-1P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid and polyimide; preparation of polyamic acids and polyimides as liquid crystal orientation agents)
IT 173027-20-8P 173027-23-1P 184908-82-5P 184908-84-7P 184908-86-9P
184908-89-2P 184908-90-5P 184908-91-6P 184908-92-7P
184908-93-8P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid; preparation of polyamic acids and polyimides as liquid crystal orientation agents)
IT 89-32-7 106-50-3, 1,4-Benzenediamine, reactions 2420-87-3,
[5,5'-Biisobenzofuran]-1,1',3,3'-tetrone 13912-65-7 78540-30-4
78540-33-7 78546-37-9 87078-75-9 173027-19-5 184908-75-6
184908-76-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of polyamic acids and polyimides as liquid crystal orientation agents)
IT 184908-92-7P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid; preparation of polyamic acids and polyimides as liquid crystal orientation agents)
RN 184908-92-7 HCAPLUS
CN Cholest-5-en-3-ol (3 β)-, 3,5-diaminobenzoate, polymer with
1,4-benzenediamine and 3,3'-(1,4-phenylene)bis[dihydro-3-methyl-2,5-furandione] (9CI) (CA INDEX NAME)

CM 1

CRN 173027-19-5
CMF C34 H52 N2 O2

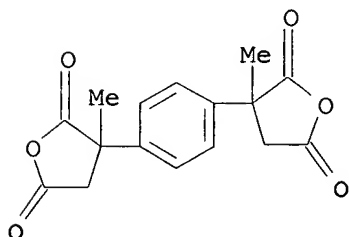
Absolute stereochemistry.



CM 2

CRN 78546-37-9

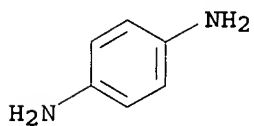
CMF C16 H14 O6



CM 3

CRN 106-50-3

CMF C6 H8 N2



L24 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1987:5540 HCAPLUS
 DN 106:5540
 TI Preparation and characterization of polysuccinimides
 AU Woo, Edmund P.
 CS Cent. Res., Dow Chem. Co., Midland, MI, 48674, USA
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1986), 24(11), 2823-30

CODEN: JPACEC; ISSN: 0887-624X

DT Journal

LA English

AB A series of polysuccinimides was prepared from 1,4-bis(tetrahydrofuran-2,5-dion-3-yl)benzene [78540-30-4] and characterized by various thermal and mech. methods. The polyimides showed excellent solvent and heat resistance, a balanced mech. property profile, and good toughness.

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36

ST polysuccinimide prepn property; tetrahydrofurandionylbenzene polyimide prepn property

IT Glass temperature and transition
(of polysuccinimides)

IT Polyimides, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)
(polysuccinimides, preparation and properties of)

IT 78540-29-1P, 1,4-Bis(1,2-dicarboxyethyl)benzene

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and dehydration of)

IT 78540-30-4P 78546-37-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of)

IT 78567-45-0P 78567-72-3P 105710-66-5P 105710-68-7P 105710-71-2P
105726-09-8P 105726-10-1P 105726-11-2P 105726-12-3P
105726-13-4P 105726-14-5P 105744-73-8P 105753-69-3P 105753-70-6P
105753-71-7P 105808-49-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and properties of)

IT 77104-45-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with sodium cyanide)

IT 1009-61-6, p-Diacetylbenzene

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with Et cyanoacetate)

IT 143-33-9, Sodium cyanide

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with bis(carbethoxycyanoethenyl)benzene)

IT 105-56-6, Ethyl cyanoacetate

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with diacetylbenzene)

IT 47375-13-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sodium cyanide)

IT 105726-09-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and properties of)

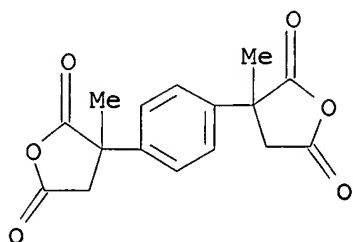
RN 105726-09-8 HCAPLUS

CN 2,5-Furandione, 3,3'-(1,4-phenylene)bis[dihydro-3-methyl-, polymer with
4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 78546-37-9

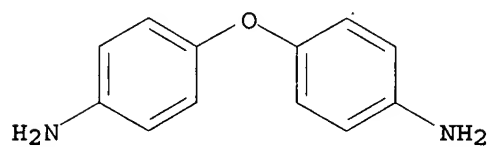
CMF C16 H14 O6



CM 2

CRN 101-80-4

CMF C12 H12 N2 O



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